



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/666,340	09/17/2003	Hisashi Tsukamoto	Q137-US4	8397
31815 7590 02/05/2008 MARY ELIZABETH BUSH QUALLION LLC P.O. BOX 923127 SYLMAR, CA 91392-3127			EXAMINER WANG, EUGENIA	
			ART UNIT 1795	PAPER NUMBER
			MAIL DATE 02/05/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/666,340	Applicant(s) TSUKAMOTO ET AL.	
	Examiner EUGENIA WANG	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 December 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 29,31-33,71-88,90-104 and 106-127 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 84-88, 90-104, and 106-126 is/are allowed.
- 6) ☒ Claim(s) 29,31-33,71,74-76,78,80,82 and 83 is/are rejected.
- 7) ☒ Claim(s) 72,73,77,81 and 127 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/27/07, 12/19/07</u> .                                       | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

1. In response to the amendment filed December 19, 2007:
  - a. Claims 115-127 have been added as per Applicant's request. Claims 29, 31-33, 71-88, 90-104, and 106-127 are pending.
  - b. The previous objection to the abstract of the specification has been withdrawn in light of the amendment.
  - c. The rejection with respect to claim 29 and its dependents are maintained. The other prior art rejections have been withdrawn in light of the amendment. The double patenting rejections are maintained with any changes made to them in light of the amendment. The action is final.

### ***Information Disclosure Statement***

2. The information disclosure statement filed December 19, 2007 has been placed in the application file and the information referred to therein has been considered as to the merits. A copy of the information disclosure statement filed June 27, 2007 has been included to show the consideration of EP 0942484 B1.

### ***Claim Objections***

3. Claim 127 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 127 fails to further limit claim 112. Claim 112 is dependent on claim 111, and thus claims both a mandrel

with a tube, wherein the pin is positioned in the interior of the tube. Therefore the scope of claim 112 is the same as that of 127.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 29, 31, 32, 71, 76, 79, 80, 82, and 83 are rejected under 35 U.S.C. 102(b) as being anticipated by US 3510353 (McHenry).

As to claim 29 McHenry teaches an electrochemical cell (fig. 1). The cell has an electrode assembly comprising negative electrode [19], separator [22], and positive electrode [17] (fig. 1). Furthermore, the combination of the metal tube [12] and plastic tube [13] make up an elongate mandrel, which is mounted on an wire contact [14] (elongate pin). (The opening that the pin (wire [14]) is fitted in constitutes the longitudinal slot of the mandrel (metal and plastic tube [12, 13])). As seen in fig. 1, the positive electrode strip [17] is in electrical contact with wire [17] via tab [18], while the negative electrode strip [19] is insulated from it. The electrode assembly in fig. 1 also shows that the electrode assembly is wound around the pin. It is noted that the electrode strip [17] is in contact with the pin [14], which extends through the mandrel slot (as applied to claim 29) (fig. 1). It is further noted that plastic washer [15] serves as an insulating first end cap that is indirectly on the pin (as it surrounds the mandrel (metal and plastic tube [12, 13], which surrounds the pin (wire [14])); pin (wire [14]) extends

through the plastic washer [15], which is sealed to the pin via plastic tube [13] (as applied to claims 76 and 84). It is finally noted that the mandrel (metal and plastic tubing [12, 13]) is fitted around the pin (wire [14]) in such a manner that the electrode assembly is wound around both the pin and the mandrel (fig. 1).

As to claim 31, McHenry's battery has wire [14] (pin) extending to positive button [16], where the positive button [16] would be the terminal part of wire [14] (fig. 1; col. 2, lines 28-30). Thus the wire [14] constitutes a portion of the terminal.

As to claim 32, McHenry's mandrel is crimped onto the pin, as the metal [12] is said to be crimped (fig. 1; col. 2, lines 20-22).

As to claim 71, McHenry's electrode strips [17, 19] have separator strip [22] to separate them (fig. 1).

As to claims 79 and 80, McHenry's mandrel is defined by the combination of the metal and plastic **tube** [12, 13] (as applied to claim 79). Furthermore it is seen that the pin is positioned inside of the tube (as applied to claim 80) (fig. 1).

As to claim 83, the mandrel (metal and plastic tubes [12, 13]) reinforce is seen to be reinforcing the pin (fig. 1).

### ***Response to Arguments***

5. Applicant's arguments filed December 19, 2007 have been fully considered but they are not persuasive.

Applicant argues that in claim 29, the portion that reads "the electrode strip in electrical communication with the pin extending through the mandrel slot" limits to the interpretation that the electrode strip is what extends through the mandrel slot.

Examiner respectfully disagrees. There is no proper grammatical indication that clearly shows what the phrase "extending through the mandrel slot" modifies (the electrode strip or the pin). Thus, the interpretation that the pin is what extends through the mandrel slot is a reasonable interpretation pending clarification. Examiner suggests clarifying the language grammatically with for example 'the electrode strip, in communication with the pin, extending through the mandrel slot' or 'the electrode strip in electrical communication with the pin, wherein the electrode strip extends through the mandrel slot'.

It is noted that Applicant does not address the 103 rejections, and thus they are maintained, as seen below.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered

Art Unit: 1795

therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over McHenry, as applied to claim 29, in view of US 6387561 (Nemoto et al.).

As to claim 33, McHenry et al. does not disclose that the mandrel has a channel through which the electrolyte can be injected.

Nemoto et al. teach a battery wherein the top of the pin is used for the injection and/or extraction of electrolyte solution. The motivation for using the pin to injection and/or extract the electrolyte solution would be to suppress splash and to concretely impregnate the electrolyte solution from the end surface at the bottom part of the internal electrolyte body (col. 12, lines 37-46; col. 13, lines 1-9). Therefore it would have been obvious to one having ordinary skill in the art at the time the claimed invention was made include a channel through the central portion of a battery in order to suppress splash and to help with electrolyte impregnation. (Note: Nemoto et al. does not teach of a mandrel, however, the pin of Nemoto et al. would constitute the combined pin and mandrel [14, 12, 13] of McHenry, as they both form a similar central portion. It would have been obvious for one of ordinary skill in the art to ascertain that a channel through the pin of Nemoto et al. would equate a channel through either the pin or mandrel, or a combination of the two of McHenry.)

7. Claim 75 is rejected under 35 U.S.C. 103(a) as being unpatentable over McHenry, as applied to claim 29, in view of US 5755759 (Cogan).

As to claim 75, McHenry et al. does not teach of using a PtIr alloy as the pin.

Cogan et al. teaches the use of PtIr alloy wire as an electrode wire (col. 3, lines 43-46). The motivation for doing so would be to impart properties of a PtIr alloy, specifically that it can simulate physiological function. Therefore it would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to use a PtIr alloy as the pin in the battery of McHenry in order to impart the property of simulated physiological function so as to make the battery of McHenry usable in implantable medical devices.

8. Claim 74 is rejected under 35 U.S.C. 103(a) as being unpatentable over McHenry, as applied to claim 29, in view of US 5501916 (Teramoto et al.).

McHenry et al. does not teach that the tab [18] connecting the wire [14] and positive electrode [17] is welded.

However Teramoto et al. teaches an aluminum hollow tube [48] (an elongate pin), where the positive electrode is welded to the hollow tube via lead [52] (fig. 9; col. 8, lines 47-50). The motivation for welding the positive electrode to the pin is to provide better electrical contact and to provide more mechanical strength for connecting the two. Therefore it would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to weld the tab [18] of McHenry between the wire [14] and positive electrode [17] in a similar manner as Teramoto et al. provides by welding tube [48] to the positive electrode via lead [52] in order to provide mechanical stability of connection between the two as well as for improved electrical contact.

9. Claim 78 is rejected under 35 U.S.C. 103(a) as being unpatentable over McHenry, as applied to claim 29, in view of US 5882815 (Tagawa).



As to claim 78, McHenry et al. does not teach that either titanium or a titanium alloy is used for the mandrel.

However, Tagawa teaches an electrode assembly wherein titanium alloy is used as the center pin, providing the motivation of it being corrosion resistant and lightweight (col. 3, lines 1-12). Therefore it would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to use the titanium alloy of Tagawa as the metal plate [12] portion of the mandrel taught by McHenry in order to improve corrosion resistance and to reduce the weight of the battery.

### ***Double Patenting***

10. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

11. Claim 29 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 7 of U.S. Patent No. 6670071.

The pertinent claims of US 6670071 are listed below:

1. An electric storage battery including:  
a case comprising a peripheral wall defining an interior volume; and  
an electrode assembly mounted in said interior volume, said electrode assembly including:  
an electrically conductive elongate pin; and  
first and second opposite polarity electrode strips wound together to form a spiral roll, each electrode strip having inner and outer ends, wherein said first electrode strip is electrically coupled to said pin at said inner end; and  
a hollow elongate mandrel closely fitted around said pin for mechanically reinforcing said pin.
7. The battery of claim 1 wherein said mandrel defines an elongate slot; and wherein

Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1 and 7 in US 6670071 teaches a battery with a wound electrode assembly with a pin and a mandrel wrapped around the pin in such a manner that the mandrel defines an elongate slot (as applied to claim 29 of the instant application). Although slight differences within the claim language exists, they would have been obvious over one another to one of ordinary skill in the art. (Note: Some of the dependent claims of US 66707071 read on the dependent claims of the instant application. However, they have been omitted for brevity's sake.)

12. Claims 29, 31-33, 71-104, and 106-127 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 205-219 of copending Application No. 10/484474.

The claims of 10/484474 corresponding to the independent claims 29, 84, 100, 115, and 122 of the instant application are listed below:

205. (currently amended) ~~The battery of claim 66, wherein~~ An electric storage battery, comprising:  
a case having a wall defining an interior volume and an exterior volume of less than 1 cm<sup>3</sup>;  
an electrode assembly in the interior volume, the electrode assembly including first and second opposite polarity electrode strips wound together to form a spiral roll; and  
the first and second electrode strips being are wound around a pin with the first electrode strip being electrically coupled to the pin and an elongate mandrel being is fitted around the pin.
210. (previously presented) The battery of claim 205, further comprising:  
a first end cap mounted on the pin,  
the first end cap including an electrical insulator,  
the pin extending through the electrical insulator, and  
the pin being hermetically sealed to the electrical insulator.
211. (previously presented) The battery of claim 205, wherein the mandrel defines an elongate slot and the first electrode strip extends through the slot.
217. (previously presented) The battery of claim 205, wherein the mandrel has a c-shaped cross-section.
218. (previously presented) The battery of claim 205, wherein a portion of the first electrode strip is positioned between the mandrel and the pin.

Although the conflicting claims are not identical, they are not patentably distinct from each other because copending claims 205, 210, and 211 teach a battery with a wound electrode assembly with a pin and a mandrel wrapped around the pin in such a manner that the mandrel defines an elongate slot (as applied to claims 29, 84, and 100 of the instant application). Furthermore, the battery has an insulated first end cap (as applied to claims 84 and 115 of the instant application). Additionally, copending claim 217 recites the c-shaped mandrel (as applied to claims 115 and 122 of the instant application). Copending claim 218 recites that an electrode strip is positioned between

the mandrel and pin (as applied to claims 84 and 100 of the instant application). Although slight differences within the claim language exist, they would have been obvious over one another to one of ordinary skill in the art. (Note: The dependent claims of the copending application read on the dependent claims of the instant application, with slight differences being obvious between the copending application and the instant application being obvious over one another. However, the dependent claims have been omitted for brevity's sake.)

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

13. Claims 29, 31-33, 71-104, and 106-127 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 43-86 of copending Application No. 10/665687.

The claims of 10/665687 corresponding to the independent claims 29, 84, 100, 115, and 122 of the instant application are listed below:

43. (currently amended) An electric storage battery, comprising:  
a case sealed by a first end cap and a second end cap;  
an electrically conductive terminal pin extending through the first end cap and electrically insulated from the case;  
an electrode assembly disposed within the case, the electrode assembly includes an electrode in electrical communication with the pin and an electrode electrically insulated from the pin;  
a flexible conductive tab electrically coupled to the electrode that is electrically insulated from the pin ~~the second electrode~~, the tab extending from a first location adjacent to the case past a center point of the second cap to a second location where the tab is physically electrically connected to the second end cap, the tab extending past the center point at a location between the first location and the second location; and  
the tab is not connected to the second end cap from the first location to the second location.

**68. (previously presented) The battery of claim 43, wherein the electrodes are electrode strips wound around the pin so as to form a spiral role on the pin.**

**70. (previously presented) The battery of claim 68, wherein the electrode assembly includes a mandrel mounted on the pin such that the electrodes are wound around the pin and the mandrel.**

**71. (previously presented) The battery of claim 70, wherein the mandrel includes a longitudinal slot; and wherein  
the electrode in electrical communication with the pin extends through the mandrel slot.**

**73. (previously presented) The battery of claim 70, wherein a portion of the electrode in electrical communication with the pin is positioned between the mandrel and the pin.**

**80. (previously presented) The battery of claim 70, wherein the mandrel has a c-shaped cross-section.**

**81. (previously presented) The battery of claim 70, wherein the mandrel is fitted around the pin such that the electrodes are wound around the pin and the mandrel.**

**85. (previously presented) The battery of claim 43, wherein the first end cap includes an electrical insulator,  
the pin extends through the electrical insulator, and  
the pin is hermetically sealed to the electrical insulator.**

Although the conflicting claims are not identical, they are not patentably distinct from each other because copending claims 43, 68, 70, 71, 81, and 85 teach a battery with a wound electrode assembly wound around both a pin and a mandrel wrapped, where the mandrel defines an elongate slot (as applied to claims 29, 84, and 100 of the instant application). Furthermore, the battery has an insulated cap (as applied to claims 84 and 115 of the instant application). Additionally, copending claim 80 recites the c-shaped mandrel (as applied to claims 115 and 122 of the instant application).

Copending claim 73 recites that an electrode strip is positioned between the mandrel and pin (as applied to claims 84 and 100 of the instant application). Although slight differences within the claim language exist, they would have been obvious over one another to one of ordinary skill in the art. (Note: The dependent claims of the copending application read on the dependent claims of the instant application, with slight differences being obvious between the copending application and the instant application being obvious over one another. However, the dependent claims have been omitted for brevity's sake.)

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

14. Claims 29, 31-33, and 71-100 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 55 and 70-88 of copending Application No. 10/666790.

The claims of 10/666790 corresponding to the independent claims 29, 84, 100, 115, and 122 of the instant application are listed below:

**55. (currently amended) An electric storage battery comprising:**

**a an case hermetically sealed by a first end cap and a second end cap, wherein ~~the said~~ case excludes fill holes and wherein the first end cap excludes fill holes and the second end cap excludes fill holes;**

**an electrically conductive terminal pin extending through ~~the said~~ first end cap and electrically insulated from ~~the said~~ case;**

**an electrode assembly disposed within ~~the said~~ case, the electrode assembly includes an electrode in electrical communication with the pin and an electrode electrically insulated from the pin; and**

**a flexible conductive tab providing electrical communication between the second end cap and the electrode that is electrically insulated from the pin.**

72. (previously presented) The battery of claim 70, wherein the electrode assembly includes a mandrel mounted on the pin such that the electrodes are wound around the pin and the mandrel.

73. (previously presented) The battery of claim 72, wherein the mandrel includes a longitudinal slot; and wherein  
the electrode in electrical communication with the pin extends through the mandrel slot.

75. (previously presented) The battery of claim 72, wherein a portion of the electrode in electrical communication with the pin is positioned between the mandrel and the pin.

82. (previously presented) The battery of claim 72, wherein the mandrel has a c-shaped cross-section.

83. (previously presented) The battery of claim 72, wherein the mandrel is fitted around the pin such that the electrodes are wound around the pin and the mandrel.

87. (previously presented) The battery of claim 55, wherein the first end cap includes

an electrical insulator,  
the pin extends through the electrical insulator, and  
the pin is hermetically sealed to the electrical insulator.

Although the conflicting claims are not identical, they are not patentably distinct from each other because copending claims 55, 72, 73, 83, and 87 teach a battery with a wound electrode assembly wound around both a pin and a mandrel wrapped, where the mandrel defines an elongate slot (as applied to claims 29, 84, 100, 115, and 122 of the instant application). Furthermore, the battery has an insulated cap (as applied to claims 84 and 115 of the instant application). Additionally, copending claim 82 recites the c-shaped mandrel (as applied to claims 115 and 122 of the instant application). Copending claim 75 recites that an electrode strip is positioned between the mandrel

and pin (as applied to claims 84 and 100 of the instant application). Although slight differences within the claim language exist, they would have been obvious over one another to one of ordinary skill in the art. (Note: The dependent claims of the copending application read on the dependent claims of the instant application, with slight differences being obvious between the copending application and the instant application being obvious over one another. However, the dependent claims have been omitted for brevity's sake.)

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

15. Claims 29, 31-33, 71-104, and 106-127 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-9 and 66-71 of copending Application No. 10/666861.

The claims of 10/666861 corresponding to the independent claims 29, 84, 100, 115, and 122 of the instant application are listed below:

1. (previously presented) An electric storage battery, comprising:
  - a case defining an interior volume; and
  - an electrode assembly in the interior volume, the electrode assembly including
    - an electrically conductive elongate pin, and
    - first and second electrode strips wound around the pin,
    - the first electrode strip being coupled to the pin; and
    - an elongate mandrel fitted around the pin.



6. (previously presented) The battery of claim 1, further comprising:  
    a first end cap mounted on the pin,  
        the first end cap including an electrical insulator,  
        the pin extending through the electrical insulator, and  
        the pin being hermetically sealed to the electrical insulator.
7. (previously presented) The battery of claim 1, wherein the mandrel defines an elongate slot and the first electrode strip extends through the slot.
69. (original) The battery of claim 1, wherein the mandrel has a c-shaped cross-section.
70. (original) The battery of claim 1, wherein a portion of the first electrode strip is positioned between the mandrel and the pin.
71. (original) The battery of claim 1, wherein the mandrel is fitted around the pin such that the first electrode strip and the second electrode strip are wound around the mandrel.

Although the conflicting claims are not identical, they are not patentably distinct from each other because copending claims 1, 6, 7, and 71 teach a battery with a wound electrode assembly wound around both a pin and a mandrel wrapped, where the mandrel defines an elongate slot (as applied to claims 29, 84, 100, 115, and 122 of the instant application). Furthermore, the battery has an insulated cap (as applied to claims 84 and 115 of the instant application). Additionally, copending claim 69 recites the c-shaped mandrel (as applied to claims 115 and 122 of the instant application). Copending claim 70 recites that an electrode strip is positioned between the mandrel and pin (as applied to claims 84 and 100 of the instant application). Although slight differences within the claim language exist, they would have been obvious over one another to one of ordinary skill in the art. (Note: The dependent claims of the copending application read on the dependent claims of the instant application, with slight

differences being obvious between the copending application and the instant application being obvious over one another. However, the dependent claims have been omitted for brevity's sake.)

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

### ***Response to Arguments***

16. Applicant comments on the double patenting with respect to only US 6670071. However, Applicant has not provided any argument or proof as to why the provisional double patenting rejections previously made do not still apply. Therefore, Examiner upholds the double patenting rejection.

As mentioned above and within the previous office action, the dependent claims were omitted within the double patenting rejection for brevity's sake. However they were still rejected. More importantly, the NOTE within the allowable subject matter heading in the previous office action clearly set forth that incorporation of the allowable subject matter would not overcome the double patenting rejection. The example used in the previous office action is reiterated herein for clarity's sake: *"For example, with respect to copending application 10/666790, the addition of copending claim 75 would read on claims 72, 89, and 105 of the instant application, the addition of copending claim 76 would read on the claims of 73, 90, and 106 of the instant application, the addition of copending claim 78 would read on claims 77, 93, and 109 of the instant application, and the addition of copending claim 82 would read on claims 81, 97, and 113 of the instant application."* Now cancelled claim 89 has been incorporated into

claim 84, and now cancelled claim 105 has been incorporated into claim 100. However, as previously mentioned, copending claim 75 of 10/666790 reads on such limitations. Accordingly, such changes made to the double patenting rejection are proper.

***Allowable Subject Matter***

17. Claim 84-88, 90-104, and 106-127 allowed.

The following is an Examiner's statement of reasons for allowance: none of the prior art of record, alone or in combination, appear to teach, suggest, or render obvious the invention of at least claims 84 and 100 or claims 115 and 122.

Claims 84 and 100 teach the electrode assembly comprising the elements therein. Notably, they teach that a portion of the electrode strip in communication with the pin is positioned between the mandrel and the pin.

McHenry does not teach the invention of claims 84 and 100. As seen in the figure, the mandrel (metal tube [12] and plastic tube [13]) encompasses the pin (wire [14]). The only way to connect the electrode strip between the pin and mandrel is to do so on the underside of the battery. There is no motivation to do so. Further, if it were done, then it would destroy the reference in the fact that the wound structure as seen in the figure would fail to exist as pictured. Since claims 85-88, 90-99, 101-104, 106-114, and 127 are dependent on either claim 84 or 100, they are allowable for the same reason.

Claims 115 and 122 teach the electrode assembly comprising the elements therein. Notably, they teach that the mandrel has a c-shaped cross-section.

McHenry does not teach the invention of claims 115 or 122. As seen in the figure, the mandrel (metal tube [12] and plastic tube [13]) encompasses the pin (wire [14]). This would give an o-shaped cross section. The tubular mandrel provides mechanical reinforcement for the entire surface area that extends through it. No motivation exists to alter the mandrel such that the cross section would be c-shaped, and doing so would weaken the mechanical reinforcement. Therefore, one of ordinary skill in the art would not be motivated to alter the mandrel to have a c-shaped cross section. Since claims 116-121 and 123-127 are dependent on either claim 115 or 122, they are allowable for the same reason.

18. Claims 72, 73, 77, and 81 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The reasons on why the above claims would be allowable have been set forth in the previous office action.

### ***Conclusion***

19. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

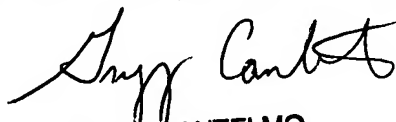
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to EUGENIA WANG whose telephone number is (571)272-4942. The examiner can normally be reached on 7 - 4:30 Mon. - Thurs., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
GREGG CANTELMO  
PRIMARY EXAMINER

EW